

AMENDMENTS TO CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A photovoltaic device comprising:
a photoelectric conversion layer receiving light incident from the front surface side; and
a transparent conductive film, formed on the front surface of said photoelectric conversion layer, including an indium oxide layer having (222) plane orientation with two (222) peaks in said indium oxide layer,

wherein said indium oxide layer contains Sn, and the content of Sn with respect to In in said indium oxide layer is at least about 2 percent by weight and not more than about 7 percent by weight,

wherein a collector is formed on the transparent conductive film.

2. (Original) The photovoltaic device according to claim 1, further comprising a semiconductor layer, formed thereon with said transparent conductive film, consisting of at least either an amorphous semiconductor or a microcrystalline semiconductor.

3. (Original) The photovoltaic device according to claim 1, wherein
said (222) peaks in said indium oxide layer include:
a first peak having an angle 2θ (θ : X-ray diffraction angle) of about 30.1 ± 0.1 degrees,
and
a second peak having an angle 2θ (θ : X-ray diffraction angle) of about 30.6 ± 0.1 degrees.

4. (Original) The photovoltaic device according to claim 3, wherein the ratio (I_1/I_2) of the intensity (I_1) of said first peak to the intensity (I_2) of said second peak is at least about 0.07 and not more than about 0.9.

5. (Original) The photovoltaic device according to claim 4, wherein the ratio (I_1/I_2) of the intensity (I_1) of said first peak to the intensity (I_2) of said second peak is at least about 0.25 and not more than about 0.75.

Claims 6-7 (Cancelled).

8. (Currently Amended) A photovoltaic device comprising:
a first conductivity type crystalline semiconductor substrate having a front surface and a back surface and receiving light incident from the side of said front surface;
a substantially intrinsic first amorphous semiconductor layer formed on said front surface of said crystalline semiconductor substrate;
a second conductivity type second amorphous semiconductor layer formed on said first amorphous semiconductor layer; and
a transparent conductive film, formed on said second amorphous semiconductor layer, including an indium oxide layer having (222) plane orientation with two (222) peaks in said indium oxide layer,
wherein said indium oxide layer contains Sn, and the content of Sn with respect to In in said indium oxide layer is at least about 2 percent by weight and not more than about 7 percent by weight,
wherein a collector is formed on the transparent conductive film.

9. (Original) The photovoltaic device according to claim 8, wherein
said (222) peaks in said indium oxide layer include:
a first peak having an angle 2θ (θ : X-ray diffraction angle) of about 30.1 ± 0.1 degrees,
and
a second peak having an angle 2θ (θ : X-ray diffraction angle) of about 30.6 ± 0.1
degrees.

10. (Original) The photovoltaic device according to claim 9, wherein
the ratio (I_1/I_2) of the intensity (I_1) of said first peak to the intensity (I_2) of said second
peak is at least about 0.07 and not more than about 0.9.

11. (Original) The photovoltaic device according to claim 10, wherein
the ratio (I_1/I_2) of the intensity (I_1) of said first peak to the intensity (I_2) of said second
peak is at least about 0.25 and not more than about 0.75.

Claims 12-13 (Canceled).

14. (Original) The photovoltaic device according to claim 8, wherein
said crystalline semiconductor substrate is an n-type semiconductor substrate, and said
second amorphous semiconductor layer is a p-type semiconductor layer.

15. (Currently Amended) A device having a transparent conductive film, comprising:
a substrate; and
a transparent conductive film, formed on said substrate, including an indium oxide layer
having (222) plane orientation with two (222) peaks in said indium oxide layer,

wherein said indium oxide layer contains Sn, and the content of Sn with respect to In in said indium oxide layer is at least about 2 percent by weight and not more than about 7 percent by weight,

wherein a collector is formed on the transparent conductive film.

16. (Original) The device having a transparent conductive film according to claim 15, wherein

said (222) peaks in said indium oxide layer include:

a first peak having an angle 2θ (θ : X-ray diffraction angle) of about 30.1 ± 0.1 degrees, and

a second peak having an angle 2θ (θ : X-ray diffraction angle) of about 30.6 ± 0.1 degrees.

Claims 17-18 (Cancelled).

19. (Currently Amended) A photovoltaic device comprising:

a first conductivity type single-crystalline silicon substrate having a front surface and a back surface and receiving light on the side of said front surface;

a substantially intrinsic first amorphous silicon layer formed on said front surface of said single-crystalline silicon substrate;

a second conductivity type second amorphous silicon layer formed on said first amorphous silicon layer; and

a transparent conductive film, formed on said second amorphous silicon layer, including an indium oxide layer having (222) plane orientation with two (222) peaks in said indium oxide layer,

wherein said indium oxide layer contains Sn, and the content of Sn with respect to In in said indium oxide layer is at least about 2 percent by weight and not more than about 7 percent by weight,

wherein a collector is formed on the transparent conductive film.

20. (Original) The photovoltaic device according to claim 19, wherein

said (222) peaks in said indium oxide layer include:

a first peak having an angle 2θ (θ : X-ray diffraction angle) of about 30.1 ± 0.1 degrees,

and

a second peak having an angle 2θ (θ : X-ray diffraction angle) of about 30.6 ± 0.1 degrees.